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Net Zero Transition Plans: Red Flag Indicators to Assess Inconsistencies and Greenwashing

Julia Bingler, Chiara Colesanti Senni, Tobias Schimanski

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“We urgently need every business, investor, city, state and region to walk the talk on their net zero promises. We cannot afford slow movers, fake movers or any form of greenwashing.”

António Guterres, [UN Secretary General, 2022](#)

Executive summary

Transition planning and disclosure of corporate climate transition plans are fundamental prerequisites for effective capital allocation and climate risk management. However, a critical gap exists in conceptualizing, setting, and reporting credible, ambitious and feasible corporate climate transition plans, raising concerns about greenwashing. This threatens consumer protection and financial stability.

We propose a comprehensive conceptual framework with specific indicators to assess the integrity and consistency of net-zero transition plans, monitor progress, and identify greenwashing risks. These indicators assess integrity and consistency, defined as (1) external consistency, i.e. ambition and feasibility, and (2) internal consistency, i.e. credibility of transition plans toward achieving a net-zero business strategy and support the net zero economy. The suggested indicators have been selected based on quantitative and qualitative review of 28 different transition plan disclosure and assessment frameworks, aiming to identify “the common ground” of these frameworks.

To scale the analysis of transition plans, we also propose a natural language processing (NLP)-based tool to automate the extraction and assessment of plans. To this end, the framework’s indicator assessments are designed in a straightforward yes/no scheme to enable an easy to interpret automated analyses of corporate transition plans and reports. If certain indicators are not met, the “no” assessment triggers a red flag.

The screening method is designed to assist financial institutions in assessing investee companies, and financial supervisors alike. Financial institutions can use these red flags to assess investee companies’ transition plans, enabling targeted investments in firms supporting decarbonization. Financial supervisors can employ red flag indicators to identify vulnerabilities within financial institutions and the financial system, supporting transition-resilient finance and preventing capital misallocation.

| target | governance | strategy | tracking |
|------------|----------------|-----------------|------------|
| headline | structure | management | emissions |
| ambition | skills | high carbon | progress |
| coverage | accountability | low carbon | capex |
| pathway | incentives | balance sheet | innovation |
| offsetting | transparency | engagement | revenues |
| | | just transition | engagement |
| | | biosphere | |

Figure 1: Elements and structure of the transition plan credibility, ambition and feasibility assessment framework.

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1. Introduction

Transition planning and the disclosure of corporate climate transition plans to manage climate related risks and the green transition are a prerequisite for effective capital allocations in the real economy and financial institutions. In order to achieve a global net zero economy, firms must reduce Greenhouse Gas (GHG) emissions by 2030, while financial institutions need to use their investments and influence to make finance flows consistent with a pathway that scales up climate mitigation across all sectors and regions.

Climate transition plans are a vital tool to demonstrate to capital markets and stakeholders that an organization is committed to achieving a 1.5-degree pathway with no or limited overshoot, and that its business model will remain relevant (i.e., profitable) in a net-zero carbon economy. Transition plans are forward-looking strategies to align with the transition to a sustainable economy, and should work as a compass for market participants to direct their future actions and strategies. To be credible, they should be clear, targeted, time-bound, science-based, accountable and comparable. Furthermore, they should be compatible with nature goals such as the Kuming-Montreal Global Biodiversity Framework, and respect the EU taxonomy's Do No Significant Harm (DNSH) principles. The Glasgow Financial Alliance for Net Zero ([GFANZ](#)) defines "a credible net-zero transition plan [...] is actionable and focused on near-term action." Many attempts to conceptualize credibility, disclosure items and ambitions of transition plans have been undertaken. On the regulatory side, the European Commission¹ has just adopted the [European Sustainability Reporting Standards](#) as a delegated act of the Corporate Sustainability Reporting Directive (CSRD), and this act details the components of a corporate climate transition plan and of a corporate biodiversity transition plan. In addition, the EU is currently legislating on mandatory corporate climate transition plans (or similar) in several other files, including the Capital Requirement Directive (for banks), the European Green Bond Standard, and potentially Solvency II (for insurers) and the Prospectus regulation and the Listing Act². The EU regulatory framework on mandatory corporate transition plans is therefore evolving very fast; the mandate for corporate and financial regulators and supervisors to monitor compliance of supervised companies with these new obligations is following.

However, to date, there is a serious gap in the conceptualisation and reporting of ambitious, credible, and feasible corporate climate transition plans. This has been highlighted by various institutions from NGOs to central banks, including [WWF](#), the Carbon Disclosure Project (CDP), the World Benchmarking Alliance (WBA) and the central bankers' and financial supervisors' [Network for Greening the Financial System \(NGFS\)](#). This is important because the lack of a clear framework opens the door to greenwashing, in that companies can, for instance, only commit targets that are very unspecific and hard to evaluate.

¹ A recent Recommendation by the European Commission defines transition plans as follows: "Transition plan mean an aspect of the undertaking's overall strategy that lays out the entity's targets and actions for its transition towards a climate-neutral or sustainable economy, including actions, such as reducing its GHG emissions in line with the objective of limiting climate change to 1.5°", see: [COMMISSION RECOMMENDATION \(EU\) 2023/1425 of 27 June 2023 on facilitating finance for the transition to a sustainable economy](#), Official Journal of the European Union, 7 July 2023, L174/19-46.

² including the [EU Taxonomy Regulation \(EU\) 2020/852](#), methodologies set out in the [EU Climate Transition Benchmarks](#), [EU Paris-aligned Benchmarks](#) and [sustainability-related disclosures for benchmarks Regulation \(EU\) 2019/2089](#), the [Corporate Sustainability Reporting Directive \(EU\) 2022/2464](#) and the recently agreed [European Green Bond Regulation \(May 2023\)](#).

The credibility of net-zero transition plans and the connected risk of greenwashing is a concern for financial supervision for two main reasons. First, consumer protection (conduct). Supervisors should guarantee that consumers are not misguided by non-credible claims. Information shall be fair, clear and not misleading. Second, the implications of greenwashing for micro- and macrofinancial stability (prudence) through increased physical and transition risks.

Consumer protection is closely related to conduct considerations. For example, the Proposal for the [EU Green Claims Directive](#) states that *“if environmental claims are not reliable, comparable and verifiable, consumers and other market actors cannot fully leverage their purchasing decisions to reward better environmental performance. Similarly, the lack of reliable, comparable and verifiable information hinders incentives for optimising environmental performance, which would typically go hand in hand with efficiency gains and cost savings for companies along the supply chain as well.”*

Micro and macrofinancial stability risks can arise if greenwashing is not properly identified. Greenwashing can undermine the effectiveness of prudential policies as market participants would be able to circumvent regulations by hiding, for instance, their climate footprint. Furthermore, supervisors might not be able to identify early on the likely transition pathway the economy has entered, which can have important implications for financial stability. Indeed, past climate scenario analyses and stress tests conducted by the [ECB](#) and the [Bank of England](#) have [shown that](#) orderly transition pathway, in which climate policies are introduced early and gradually become more stringent, bear considerably less financial risks than disorderly transition pathways.

Financial supervisors have started to understand the importance of transition plans for financial institutions and corporations. For example, the [NGFS](#) stated in its recent transition plan review: *“Micro-prudential authorities seek to understand a financial institution’s strategy to prepare/respond to the risks associated with climate change. Transition plans could help these authorities understand the transition risks an institution may be exposed to as a result of its strategy, risk appetite and corresponding risk management framework. Similarly, corporate transition plans provide financial institutions with valuable information on their counterparties’ future trajectory, which in turn can inform financial institutions’ own strategy, risk appetite and risk management.”*

We propose a conceptual framework to address this gap, outlining specific indicators for financial institutions and financial supervisors to assess transition plans, monitor the progress against net-zero targets and identify greenwashing risks. This concept note aims to identify indicators to assess integrity and consistency, defined as (1) external consistency, i.e. ambition and feasibility, and (2) internal consistency, i.e. credibility of transition plans toward achieving a net-zero business strategy and support the net zero economy. The suggested indicators have been selected based on quantitative and qualitative review of 28 different transition plan disclosure and assessment frameworks, aiming to identify “the common ground” of these frameworks. The approach proposed is based on the usage of “red flag indicators” to signal that transition plans perform particularly inferior against some of the selected criteria. The objective is to define a methodology based on a “common ground” framework to assess the ambition, credibility and feasibility of transition plans toward achieving a net zero economy, which can be used by financial institutions at the time of assessing investee companies, and financial supervisors alike.

The identified criteria will enable financial institutions to assess the investees' transition plans, while the "red flag indicators" will guide targeted shareholders engagements. This approach enables targeted investment towards firms that can support the transition to a low-carbon economy.

Financial supervisors can use the "red flag indicators" to identify vulnerabilities within financial institutions' books and to enter targeted micro-prudential dialogues and incorporate them in their general supervisory processes. The conceptual framework proposed in this note and the indicators identified aim to support transition-resilient finance, and prevent capital misallocation (maltransition finance), which is associated with higher transition risks for individual firms, financial institutions and the financial system. In addition, the red flag approach could be used to inform capital and/or liquidity requirements in the Basel framework. Market conduct authorities could also use the proposed framework to inform their interventions.

2. Background

Inconsistencies in transition plan and greenwashing are two closely related issues. Both problems have been targeted from various perspectives with differing key concerns. We provide an overview of the status quo about the concepts and debates regarding greenwashing, transition planning, transition plans, and the financial supervisors' interests in the issues based on conduct and prudential perspectives.

2.1 Greenwashing

Several identification methods of greenwashing exist. An initial distinction can be done between absolute and relative indicators for greenwashing. In the first category, one option is to identify what is 'green', another one is to outline what is 'always dirty' and thereby never possible to be 'green'. For example, the EU Taxonomy defines environmentally sustainable activities ("green activities") as well as activities that cause significant harm ('Do-no-significant harm'), and the EU Sustainable Finance Disclosure Regulation (SFDR) identifies criteria for fossil fuel related companies in the delegated acts. Relative indicators allow to flag higher risks of greenwashing, rather than assert definitively if greenwashing is present or not. Finally, it is possible to require companies to provide justifications for all activities labelled as green. This would enable third parties to assess whether they agree with the definition that was applied or not.

Greenwashing within financial markets can happen at different levels. Either at financial product level, or individual institution (real economy or financial) as well as at the level of the interaction between investors with the investee companies (e.g. engagement, voting practices, lobbying activities).

Greenwashing can materialize in several ways. The literature refers to greenwashing as the practice of communicating misleading statements, obfuscation of information, and diversion from actual sustainability performance ([Carmichael et al., 2023](#)). For instance, [Planet Tracker](#) identifies various greenwashing-related activities, and classifies these into six categories: Greencrowding, Greenlighting, Greenshifting, Greenlabelling, Greenrinsing, and Greenhushing. More generally, greenwashing includes a) information, which is not wrong, but misleading or overstating certain effects, b) information which is too generic, and c) information about targets which are in itself not ambitious or aligned with broader goals. In most cases, a combination of the various elements are observed for greenwashers. Greenwashing can be intentional or unintentional.

With regards to consumer protection, financial supervisors are providing first definitions of greenwashing. For example, the [Swiss Financial Market Supervisory Authority \(FINMA\)](#) mentions that “*greenwashing refers to the practices of investors that consciously or unconsciously mislead their clients about the sustainable characteristics of financial products and services*”. The [Stakeholder Group \(SMSG\) to the European Securities and Markets Authorities \(ESMA\)](#) recommends ESMA to adopt the following definition: “the practice of misleading investors, notably (but not limited to) in the context of gaining an unfair competitive advantage, by making an unsubstantiated ESG claim about a financial product or service”. Similar definitions are used referring to ‘greenwashing’ regarding consumer goods, services, etc. (See, for instance, the [latest case](#) brought forward by the Swiss consumers protection agency against 11 companies.)

While this definition is correct, ‘greenwashing’ is more multifaceted and has further reaching implications in the context of financial flows. This holds especially true for the so far under-researched implications of greenwashing for micro- and macrofinancial stability, i.e. the prudence aspect of greenwashing. In what follows, we try to shed some light on the additional dimensions of greenwashing and how they relate to financial supervision.

There are many risks associated with greenwashing. Amongst others there is a microprudential risk of financial institutions investing in so-called green projects, companies, where over time it becomes clear that these were not (e.g., [DWS](#)). This can create transition risks which, again, result in financial risks influencing potentially the stability of the financial firm, thus translating into macro-financial risk. Furthermore, this can slow down the transformation of the economy, which will again result in increased risks, as the interventions need to be more drastic. On the conduct side, greenwashing is the deception of the client and thereby the consumer of a financial product has not been protected. Other risks are that there is a loss of trust in the financial markets, that financial actors have increased litigation and reputation risks, which again influence the profitability and stability of a financial institution.

Consequently, financial institutions are increasingly concerned about the reputation and litigation risk dimension of greenwashing, which might translate into financial risks. For example, [HSBC](#) states in the risk section of its latest annual that it is exposed to greenwashing in three main dimensions: (1) Accurate reporting of the net-zero progress, (2) inappropriate green product marketing, (3) failure to monitor clients’ climate commitments. However, research by [EY](#) has shown that only a small fraction of the FTSE100 have published credible net zero plans, which exposes them to possible litigation risks as identified by HSBC.

2.2 Transition Planning and Transition Plans

Greenwashing concerns and credibility in the context of climate transition claims and planning have early been discussed by various non-governmental initiatives. In 2020, [Climate Bonds Initiative published a whitepaper \(CBI, 2020\)](#) defining credible transition principles (i.e. 1.5 degree aligned, front loaded, no offsets) and the [CBI guidance](#) (the Hallmarks) for what needs to be included in a credible transition plan. The [Climate Bonds Certification Standard \(CBS4\)](#) allows for entity transition plans to be certified as currently 1.5 degree aligned or aligned by 2030. The verification is done by an independent 3rd party and the company needs to have a plan that meets the sector specific criteria that CBI publishes. The [Global Risk Institute](#) published a list of possible greenwashing claims, and guiding questions that could help third parties to assess the credibility and ambition of an environmental claim on a case-by-case basis. Various initiatives started to develop and communicate criteria for credible and ambitious transition plans. We can distinguish disclosure frameworks (TCFD, [Climate Policy Initiative](#)), disclosure standards accounted for in legislation like in the Corporate Sustainability Reporting Directive (CSRD) (such as UK [Transition Plan Task Force](#) or the European Sustainability Reporting Standards ([ESRS](#))), and target setting and assessment methodologies (such as the French [ACT initiative](#) created in 2015). External assessments have been conducted for example by the [Transition Pathways Initiative](#) and the [World Benchmarking Alliance](#). Moreover, the topic has been covered by WWF in several publications (see, for instance, at international level [WWF \(a\)](#), in the United Kingdom in [WWF\(b\)](#) and at European level in [WWF \(c\)](#)).

So far, attempts to counter greenwashing and inconsistencies in corporate transition plans usually require better and more comparable disclosures. They have been requesting greater product transparency (prospectus, contracts, half yearly reporting, etc.), demand that the sustainability of the financial product is discussed at the point of sale and thereby the customer is sufficiently aware of what she/he is buying.

Various international policy initiatives are currently developing approaches to ensure climate transition plan credibility and ambition. The [UN](#) has set up a [High-Level Expert Group](#) on the Net-Zero Emissions Commitments of Non-State Entities, which just published its recommendations to assess the credibility of net zero promises and prevent greenwashing. The [NGFS](#) started to assess the role of supervisors and better [disclosures](#) in assessing financial institutions' transition plans, in cooperation with the [GFANZ's](#) guidance for financial firms. [GFANZ](#) also spelled out core real economy transition plan expectations which are required as datapoint inputs for financial firms' own plans. The [UK Transition Pathways Taskforce \(TPT\)](#) was mandated by the UK government to develop a gold standard of private sector climate transition plans. Following a prudential perspective, two papers from [I4CE](#) and [LSE](#) respectively suggested mandatory transition plans within Pillar 2 of the Basel Framework. In a joint publication, the [Financial Stability Board \(FSB\) and the NGFS](#) highlight the need for information for financial supervisors about transition plans: *"The lack of available data in this area meant that financial institutions were unable to fully understand their counterparties' and customers' transition plans, particularly with regards to verifying the credibility."* On the regulatory side, in the EU the European Commission has just [adopted the ESRS](#) as a [delegated act of the CSRD](#), and this act details the components of a corporate climate transition plan and of a corporate biodiversity transition plan. Given the mandatory feature of the ESRS and its entry into application starting in

the first quarter of 2024, it has the potential to substantially contribute to the structuring of corporate climate transition plans and their components. In addition, CSRD information will have to be audited applying professional standards for limited assurance.

Investors and shareholders are intensifying their work on transition planning and plans. Acknowledging the current transition plan definition and implementation gaps, [CA100+](#) announced that it will shift its focus from corporate disclosures towards intensified work on transition plan implementations.

The [NGFS](#) released a first overview and discussion paper on the relevance and use cases of transition planning and transition plans for corporates, investors and supervisors. In its overview, it differentiates between strategy focused and risk management focused use cases. They state that transition plans can support diverse regulatory goals, encompassing both micro-prudential authorities' objectives to oversee the safety and stability of financial institutions and other aims related to financial stability, market integrity, and conduct.

Categories of transition plan use cases

| Actor requiring transition plans | Government | Corporate | Financial Regulator | | |
|--|--|--|---|---|---|
| Regulatory objective | Climate outcomes (e.g., Paris Agreement) | N/A | Market conduct / consumer protection | Financial Stability | Safety and Soundness of financial institutions |
| What is the primary objective of the transition plan? | Achieve national climate outcomes through corporate action | Inform shareholders and investors of a corporate's strategy in response to climate change and transition | Provide transparency to market actors e.g., maintain market integrity, prevent financial misconduct and/or greenwashing | Effective management of aggregate climate-related financial risks (externalities and systemic vulnerabilities) | Effective management of climate-related financial risks (institution level) |
| What is the primary tool to achieve that purpose? | Disclosure of strategy to meet climate targets | Disclosure of strategy to meet climate targets | Disclosure of strategy to meet climate targets | Aggregate report on the potential build-up of climate-related risks in the financial system | Report to supervisor on how the institution will manage climate related risks associated with corporate strategy |
| Who is the primary audience? | Public | Shareholders and investors | Market participants, consumers | Macro-prudential regulators | Micro-prudential regulators |
| Is the information publicly available? | Yes | Yes | Yes | Jurisdiction-specific decision to determine whether it needs to make the information public to meet regulatory objectives | Jurisdiction-specific decision to determine whether it needs to make the information public to meet regulatory objectives |

More Strategy Focused
Broader scope in content and application
Publicly available disclosure

More Risk Management Focused
Narrower scope in content and application
Not necessarily publicly disclosed

Figure 2: Categories of Transition Plan Use Cases. Source: [NGFS, 2023](#).

Some regulators have started to propose the introduction of mandatory corporate transition plans. In the EU, there are several regulatory [frameworks](#) referencing or asking for transition plans. The proposal for an EU's Corporate Sustainability Due Diligence Directive ([CSDDD](#)) would require companies to adopt 1.5 degrees compatible transition plans, and the Corporate Sustainability Reporting Directive ([CSRD](#)) requires the disclosure of climate strategies. In addition, the Capital Requirement Directive (for banks) is being finalised and will require transition plans, while Solvency II (for insurers) may do it as well. Most of these EU files refer to the [ESRS](#), at least partly, to define the content and structure of the transition plans. The EU regulatory framework on mandatory corporate transition plans is therefore evolving very fast; and

corporate and financial regulators and supervisors are mandated to monitor and enforce compliance of supervised companies with these new obligations. Large companies in [Switzerland](#) will also be required to publish transition plans in line with the national climate targets. The [Hong Kong Stock Exchange](#) just released a draft on new listing requirements for all companies, which entails a considerable amount of transition plan elements. The [UK Parliament](#), to assess credibility of transition plans, asks financial corporations to explain their specific current performance and future targets to ramp down fossil finance and identify investments in renewable energy sources in line with the UK's national climate targets (see e.g. this [WWF-EPO publication](#)).

Furthermore, some supervisors have started to directly engage with corporates and financial institutions on transition plan inconsistent statements and disclosures. A prominent recent example is the [Australian supervisor ASIC](#), which recently released a report with examples of its regulatory interventions with regards to (1) net zero statements and targets, (2) use of terms such as 'carbon neutral', 'clean' or 'green' (3) fund labels, and (4) scope and application of investment exclusions and screens. For example, the net zero interventions yielded the following corrections from listed companies:

“(1) An oil and gas company removed net zero emissions statements, including a target to achieve net zero emissions by 2050, from its prospectus. The company was unable to provide additional information about how the targets would be achieved and the potential feasibility of achieving them.

(2) A mining company provided clarification to the market, through a market announcement, about previous statements it had made about its commitment to maintain a zero carbon emissions footprint. The clarification included further detail about the remit of this statement, the steps that had been taken to date, expected timeframes and further detail about its offsetting strategy.

(3) A mining company removed ESG-related information on its website to ensure consistency with disclosure in its prospectus. The company's website included information about the benefits and emissions reductions associated with using a particular technology for mining, but the prospectus indicated that the company was only at the exploration phase. For this reason, the company decided to remove the content from its website rather than include it in the prospectus.”

2.3 Conduct perspective

From a conduct perspective, to ensure that climate and environmental targets are met, regulators increasingly ask for credible, tangible, short-term and ambitious transition plans instead of vague long-term climate and environmental claims. In addition, the three goals of the Paris Agreement as well as the targets 14 of the [GBF](#) require governments not only to implement mitigation and adaptation measures, but also to “making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.” (Art. 2.1c of the Paris Agreement). Inconsistency between firms' transition plans and their real activities and assets impede this target to be met. The ECB's Governing Council recently

announced plans to include climate change considerations in its monetary policy strategy, which potentially has an effect on the valuation of corporate bonds, making the identification of greenwashing even more important. Moreover, the ECB's approach to assessing corporate climate performance of bond issuers explicitly includes "forward-looking climate metrics, such as whether the issuer has credible and ambitious decarbonisation targets in place" as one of the three fundamental pillars of the assessment.

Financial supervisors are active from a conduct perspective for consumer protection.

Since 2021, the [French AMF and ACPR](#) outline in their recommendations that market participants need to demonstrate that ESG-related claims are substantiated. The [United States' SEC](#) issued a proposal in May 2022 to enhance ESG disclosures to combat greenwashing of financial products and funds. Similar attempts are ongoing by the financial supervisors in [Switzerland](#) (including a voluntary disclosures scorecard by the [Swiss State Secretariat for International Finance SIF](#)), [France](#), [Singapore](#), and [Australia](#). Another prominent example is the EU Taxonomy, which aims to establish a common benchmark against claims of environmental friendliness by firms, investors, and financial products. Funds that follow specific environmental objectives or integrate environmental considerations in their investment strategy need to disclose their alignment with the EU Taxonomy. The [ESMA](#) claimed that funds, which are considerably misaligned or follow misleading disclosures will be penalized. The [Danish FSA](#) communicated a similar strategy. The [German Police together with the Financial Supervision](#) raided Deutsche Bank's DWS over misleading communication on the integration of ESG considerations in their investment products in May 2022. In a similar attempt, the SEC conducted enforcement actions against [BNY Mellon](#) and [Vale](#) for misleading ESG claims. The Philippine central bank, the [Bangko Sentral ng Pilipinas](#) (BSP) announced in August 2022 that Banks have been told to implement measures to ensure that they do not provide capital to companies engaging in greenwashing, and that they are themselves not undertaking greenwashing. The [European Supervisory Authorities](#) (ESAs) are has been collecting [examples](#) of greenwashing practice, and are working on guidelines for credible transition planning and Paris Agreement alignment of transition strategies. The [European Central Bank](#) (ECB) states in its supervisory priorities and risk assessment for 2023-2025 that it undertakes preparatory work to review banks' transition planning capabilities and readiness for ESG mandates as part of the sixth Capital Requirements Directive (CRD VI). The [Australian Securities and Investments Commission](#) (ASIC) steps up investigations of listed companies, managed funds and superannuation funds for potential greenwashing, and has made [35 greenwashing interventions](#) within less than a year, as published in its [report](#). The [Swiss Federal Council](#) asked the Federal Department of Finance / State Secretariat for International Finance (SIF) to set up a working group to determine the best way to implement the [Federal Council's position](#) on the prevention of greenwashing by September 2023. The [Irish Central Bank](#) also identified greenwashing risks as a core area of enhanced supervision in its general Securities Markets Risk Outlook Report 2023.

These developments complement the various initiatives and efforts at the metrics and disclosures level. These most prominently feature the ISSB, the EU CSRD and SFDR (together with the EU Taxonomy), and a variety of related initiatives. For example, the UK's [Climate Financial Risk Forum](#) (CFRF) together with the Financial Conduct Authority (FCA) released a set of climate risk and transition finance guidelines, including a set of industry frameworks and metrics for green and transition finance. The UK [Financial Conduct Authority](#) (FCA) itself proposed a first draft of guidelines for Sustainability Disclosure Requirements (SDR) to prevent greenwashing.

2.4 Prudential perspective

There is increasing recognition that the conduct- and the prudential perspective intersect. Inconsistent transition plan and greenwashing could cause economies ending up on financially riskier and costlier disorderly decarbonisation pathways. Even worse, greenwashing might suggest that firms and the economy is on an orderly transition path. This undermines the ability of markets to correctly price-in risks and to reward business strategy resilience to transition-related risks.

From a micro- and macroprudential perspective, the lack of transition plan consistency and greenwashing seriously threatens the resilience of companies, financial institutions, and the financial system on their way to a net-zero economy. Acknowledging this risk, regulators and various initiatives started to put greenwashing high on the agenda. For instance, The EU is finalising the review of the Capital Requirement Directive, which will mandate banks to set transition plans to manage ESG-related financial risks, in particular related to climate change. It will likely refer partly to the ESRS for clarifying how transition plans should be disclosed by banks and add specific requirements on the financial risk side. Banking regulators will be mandated to assess the implementation and compliance of banks with this new requirement. The same could potentially take place with Solvency II for insurers. However, an approach on how to comprehensively and accurately assess transition plan inconsistencies and greenwashing for prudential supervision is still missing.

This risk of entering “blindly” a disorderly transition pathway has recently been highlighted by central bankers and financial supervisors (NGFS, 2023) Sarah Breeden, the Executive Director for Financial Stability Strategy and Risk and a member of the Financial Policy Committee at the Bank of England, highlighted at the [Green Swan conference](#) 2022 that disorderly transition pathways could pose a serious threat to financial stability. A disorderly transition is also likely to be much costlier for real economy businesses and private households - with associated increasing risks of unemployment - than an orderly shift to net zero, as the results of the recently completed [BoE climate stress test](#) imply. Similar concerns about the risks posed by greenwashing were expressed in the 2022 [Financial Stability Review](#) of the ECB, which warned that greenwashing could threaten financial stability by making market participants underestimate their climate transition risks. Likewise, the [ESAs](#) cite greenwashing as a main financial sector risk in their 2023 joint committee report on risks and vulnerabilities in the EU financial system. The G20's [Financial Stability Board](#) (FSB) also put transition plans in its work plan for 2023 in order to “*analyse the relevance of transition plans for managing transition risks and financial stability and for monitoring financial stability risks from transition*” in cooperation with the supervisory reviews within the [NGFS](#). To enable better management of the forward-looking risks, the [Banque de France](#) will provide companies with a “climate indicator”, based on the ADEME ACT methodology to measure exposure of companies to climate risks. However, transition plans as important means to mitigate risk exposure and for transition resilience are an important complement to the risk exposure analyses.

Inconsistencies in transition plans are relevant for supervisors because of the impact they can have on their own financial risk and on the risk of the financial institutions that they supervise. As such, financial supervisors might inquire in their supervisory dialogues about how financial institutions handle counterparty/portfolio firm transition plans as part of risk management, as suggested in a paper on prudential transition plans from [Dikau, et al. 2022](#). Acknowledging this intersection between the prudential and the conduct perspective, the [Japan Financial Services Agency \(FSA\)](#) announced that they will address financial institutions' transition activities from a prudential perspective in their supervisory dialogues: *“As companies face various challenges related to climate change, it is important for financial institutions to build a resilient business foundation and sustainable business models through engaging in their clients and supporting clients' responses to climate-related opportunities and risks.”* And the Monetary Authority of Singapore ([MAS](#)) announced to define credibility criteria for financial institutions' transition planning by the end of 2023.

As a consequence, there is growing need to assess transition plans credibility from a supervisory risk and vulnerability perspective. The joint FSB/NGFS publication on stress tests and scenario analysis quotes the Japanese Financial Supervisor [JFSA](#), as it suggested that companies transition plan targets and progress to achieve them would be an important input for forward-looking risk assessments. The [FSB](#) will work on integrating these considerations in its climate-related risk monitoring framework through its Standing Committee on Assessment of Vulnerabilities.

However, a comprehensive conceptualisation to analyze ambition and feasibility (external consistency), as well as credibility (internal consistency) is still missing. Despite the increasing awareness of the capital misallocation risks posed by transition plan inconsistency and greenwashing, there is currently no common understanding of how to conceptualize this phenomenon, which indicators are useful to measure it, and which data is needed to identify inconsistencies in firms transition plans and greenwashing. This paper aims at closing this gap by proposing a “red flag” approach which should help financial institutions to allocate their resources towards companies that can contribute to the transition to a low-carbon economy.

3. Red flag indicators

Building on existing initiatives, we propose a framework to assess the ambition, credibility and feasibility of transition plans to eventually prevent greenwashing. The red flag indicator approach is designed as a transparent initial screening tool for micro- and macroprudential authorities to inform about credibility and ambition, and to enable a scalable cost-effective cross-checking or first screening of transition plan disclosures. The [NGFS](#) identifies transition plan credibility as a core requirement for an efficient allocation of financial resources, and for the microprudential supervisory assessment of greenwashing and climate transition-related financial risks. However, the NGFS also states that third party providers might be better equipped in terms of resources and skills than prudential authorities to assess transition plan credibility. Such third party assessments could then be used by micro- and macroprudential authorities.

3.1 Approach

The objective is to define a methodology based on common ground for assessing the ambition, credibility and feasibility of transition plans toward achieving a net zero economy, which can be used by financial institutions at the time of assessing investee companies, and financial supervisors alike.. It is thereby acknowledged that financial institutions are both users and preparers of transition plans, as highlighted by the NGFS. Financial institutions rely to some extent on credible corporate transition plans to implement their own transition plans. However, the [NGFS](#) also emphasizes that financial institutions “*can also proactively, through their engagement, seek to support and drive their counterparties to transition to sustainable activities, that are compatible with the institutions’ business objectives and risk management practices.*”

Our approach therefore identifies the common ground between the various transition plan recommendations that have been made for different use cases. Thereby, we contribute with conceptual groundwork to the [NGFS’s next steps](#) for Phase 2 of the assessment of transition plans for financial supervision, namely:

- 1. Engagement with relevant international authorities and standard setters: Given the different scope of transition plans as well as their potential relevance to the micro-prudential authorities, the NGFS will engage standard setting bodies, such as the FSB, BCBS, IAIS, and IOSCO, so that they can advance their respective work on transition plans and planning in a coordinated manner.*
- 2. Further actions by the NGFS: Based on the findings of Phase 1, the NGFS will also take forward additional work to advance the discussion on the relevance of transition plans and planning to micro-prudential authorities’ mandate, supervisory toolkit, and the overall prudential framework.*

We propose a holistic conceptual framework outlining how to detect inconsistencies in transition plan and greenwashing at corporate and financial institutional level. Our framework proposes clear indicators to help assess various activities in the transition plans against time frames. The [NGFS](#) argues in its transition plan review that mitigation and adaptation aspects, and hence transition and physical risk-related considerations could be part of a transition plan. In our approach we focus on mitigation-transition aspects.

By proposing a comprehensive list of indicators at differing priorities, the framework can also be used by any corporate to structure their internal transition planning and disclosure format. This reduces search- and information costs on where to get started in the transition planning and disclosure process, and therefore contributes towards a level playing field across corporates of all sizes. It supports small and medium-sized enterprises in getting started with transition planning, learn by doing, and improve on the disclosures through increasing experience.

The framework serves as a screening tool, which would “red flag” firms, whose transition plans lack integrity and consistency, defined as (1) external consistency, i.e. ambition and

feasibility, and (2) internal consistency, i.e. credibility. A key output of this first part of the project is a set of elements to consider when analysing corporate disclosures and transition plans. In addition, the indicators could be used by financial supervisors and regulators to specify their supervisory climate risk management expectations.

The red flag approach is designed as an engagement tool, which could be used by investors, central banks and financial supervisors to assess the risk of a certain firm being engaged in transition plan inconsistency and greenwashing. The red flags encourage and support investors to carefully assess and understand the companies' climate-related claims. However, in a period of transition where engagement and transition plan progress are key to transform the economy, the indicators are not designed as an absolute measure of "greenness" or climate alignment.

In addition, the framework will be implemented using a natural language process (NLP)-based assessment tool, to ease the screening of reports for red flags. It will provide a data-driven support instrument to select those companies, which could exhibit transition plan inconsistency and greenwashing, for more in-depth assessments, analyses, and direct engagement.

For financial supervisors and regulators, the framework and the tool could be used as a tool in conduct surveillance, and micro- and macroprudential assessment of transition risk exposure of financial actors. If a financial institution invests in firms with considerable transition plan inconsistencies, and has a considerable amount of greenwashing red-flagged firms in the balance sheet, the supervisor might want to ask the financial firm how it deals with the risk of transition plan inconsistency and greenwashing in its portfolio, or towards specific companies. In addition, if the financial institutions' own transition plan exhibits considerable red flags, the financial supervisors might want to engage with the financial institutions on their own climate transition management approach. Financial supervisors could build on the structure to specify their transition risk management expectations and check in a comparable manner which financial institutions might fall short of their expectations, to inform their supervisory dialogues and to provide targeted requests for improvements. Moreover, from a macroprudential perspective, the tool could help identification of common points of vulnerabilities in several institutions. For market conduct authorities, the natural language processing tool can serve as a useful screening tool to automate the process of identifying potential misleading claims and statements. It would thereby automate the identification process for interventions, such as the ones conducted by the [ASIC](#).

| initiative | year | preparer | focus | assessment |
|----------------------------------|------|-------------------------------|----------------|------------------------------------|
| ACT | 2021 | corporates | strategy | ambition, credibility, feasibility |
| CSLN | 2021 | financial institutions | strategy | disclosure, ambition, credibility |
| TCFD | 2021 | corporates | risk | disclosure |
| UNEP-FI | 2021 | financial institutions | strategy | ambition, credibility |
| WBA | 2021 | corporates | strategy | feasibility |
| CPI | 2022 | corporates | strategy | credibility |
| ESRS | 2022 | corporates | risk | disclosure |
| GFANZ NZTP | 2022 | financial institutions | strategy | disclosure, ambition, feasibility |
| GFANZ RETP | 2022 | real economy corporates | strategy | disclosure |
| IFRS ISSB | 2022 | corporates | risk | disclosure |
| NewClimate et al | 2022 | corporates | strategy | disclosure, credibility |
| R2Z | 2022 | corporates | strategy | ambition |
| SBTi FINZ | 2022 | financial institutions | strategy | feasibility |
| TPI | 2022 | corporates | strategy | ambition |
| TPT | 2022 | corporates | strategy | disclosure |
| UN HLEG | 2022 | corporates | strategy | ambition |
| WWF | 2022 | corporates | strategy | credibility |
| CA100+ | 2023 | high emitting corporates | strategy | disclosure, ambition |
| CBI CBS4 | 2023 | real economy corporates | strategy | disclosure, ambition, credibility |
| CDP | 2023 | corporates | strategy | disclosure, ambition, credibility |
| IIGCC | 2023 | corporates | strategy | credibility |
| NGFS | 2023 | corporates, fin. institutions | strategy, risk | credibility |
| NZAOA | 2023 | financial institutions | strategy | feasibility |
| OxSFG | 2023 | real economy corporates | strategy | credibility |
| PwC et al | 2023 | corporates | strategy | feasibility |
| RI | 2023 | financial institutions | strategy | feasibility |
| SBTi Net Zero | 2023 | corporates | strategy | ambition |
| WWF PtP | 2023 | real economy corporates | strategy | ambition, feasibility |

Table 1: Transition plan frameworks assessed for the proposed credibility, ambition and feasibility assessment framework.

The proposed methodology for red flag approach is based on existing key recommended indicators for transition plan disclosure, ambition, credibility and feasibility assessments, for corporates and financial institutions. Overall, we analysed 28 different frameworks, published in the years 2021 (5 frameworks), 2022 (12 frameworks) and 2023 (11 frameworks). We identified more than 250 individual indicators, which we then combined into a condensed indicator framework for the credibility and red flag. The individual initiatives, the targeted preparers of the plans, and the overall focus and the assessment aspects are presented in the Table 1.

3.3 Assessments

The final indicators were selected based on quantitative and qualitative considerations.

We selected those indicators with the highest coverage in the analysed initiatives' frameworks (quantitative criterion). Furthermore, we selected additional indicators based on expert feedback by the advisory board of this project (qualitative criterion). This advisory board comprised members of financial supervisors, central banks, governmental organisations, NGOs, and industry practitioners. The latter indicators were in most cases also covered in at least some analysed frameworks. The indicators are displayed in Table 2. The column "priority" displays the respective priority assigned to an indicator. We use a quantitative and qualitative approach to assign the priority labels. The value "top" indicates a consistent appearance of the indicator throughout all investigated frameworks (solely quantitative). The value "high" indicates that the majority of the frameworks include the indicator or the authors view it as important (quantitative and qualitative). The value "medium" indicates a low coverage among the frameworks or that the authors assign it with a lower priority in contrast to other indicators in the respective category (quantitative and qualitative).

The assessment approach combines a clear structure with flexible elements, which allow for a mix of comprehensive analysis options and simple assessments.

This approach covers the core usability recommendations from the projects' advisory board. To this end, we identify four core dimensions of transition plans: target, governance, strategy, and tracking. The dimensions cover various elements. The elements consist of indicators, which are defined in specific requirements.

The indicators assess integrity and consistency, defined as (1) external consistency, i.e. ambition and feasibility, and (2) internal consistency, i.e. credibility of transition plans.

This is an important step to enable users to target their engagements, based on their focus. Since simplicity has been a core wish from the advisory board, we decided to aim for yes/no assessments of the requirements. The full list of indicators and the associated red flag triggers, where applicable, are displayed in Table 3.

The structure provides a clear guidance for various users, thereby reducing information- and transaction costs.

Preparers of transition plans could follow the structure to identify the required disclosure elements for transition plans, which are not defined precisely in the ISSB or ESRS standards, yet. Alternatively, relying on the ability of the NLP-based tool to extract and structure information automatically, corporate transition plans can be assessed even if they do not have such a distinct document. The advisory board shared anecdotal evidence that the more serious corporates are about the mainstreaming of climate targets in their strategy, the less they have a distinct transition plan, but just disclose their strategy integrated in their overall business plan.

The flexible list of elements ensures that the approach can be used by various users, which increases uptake and comparability, and fosters learning by doing and by peer engagement.

The flexibility allows for targeted applications, and for early disclosure of those

elements, where transition plan-related information might be readily available. Additional elements could then be added or fulfilled in the future, as transition planning of the respective corporate progresses. Eventually, the flexible list of elements allows users for stacked approaches depending on their needs. For example, transition plan consistencies could be assessed in a decision tree with user-identified nodes at various indicators, or with an onion logic moving from one user-identified important indicator layer to another.

In addition to the core dimensions analyzed, users could also assess whether and how the red flag could also be triggered by activities in economic sectors which can be classified as ‘always environmentally harmful’. For example, this could be based on a list in the [technical Background Report of WWF](#), the [net zero tracker](#), the [global oil and gas exit list](#), the global [coal exit list](#), and the oil + gas and coal policy [tracker initiatives](#). The precise way how to integrate this approach to the indicators is to be determined within the next phase of the project. It is important to always verify whether these companies are prone to transition plan inconsistency and greenwashing, since their business activities are very damaging to the environment. So if they claim to be green, but they are not, this is particularly harmful for stakeholders and investors. The red flag can also be triggered by the fact that the company operates in a very environmentally sensitive area or protected sites.

| item | requirement | priority | external consistency red flag trigger | internal consistency red flag trigger |
|-------------------|--|----------|---------------------------------------|---------------------------------------|
| target | | | | |
| headline | | | | |
| commitment | climate commitment wording is available | top | no | . |
| cheap talk | commitment is not classified as cheap talk by ClimateBERT | high | no | no |
| absolute | absolute emission reduction target defined | top | no | . |
| intensity | intensity targets are shown to be aligned with absolute targets | medium | no | no |
| ambition | | | | |
| net zero | net zero target defined | high | no | . |
| 2050 | net zero target achieved no later than 2050 | top | no | . |
| 2030 | plan for -50% emissions by 2030 | medium | no | . |
| coverage | | | | |
| complete | target covers all business activities and subsidiaries | high | no | no |
| scope 1 | absolute emissions target for scope 1 defined for min 95% of scope 1 emissions | high | no | . |
| scope 2 | absolute emissions target for scope 2 defined for min 95% of scope 2 emissions | high | no | . |
| scope 3 | absolute emissions target for scope 3 defined for min 95% of scope 3 emissions | high | no | . |
| scope sum | sum of scope targets shown to meet overall target ambition | medium | no | no |
| methane | separate targets for CO2 and methane defined | medium | no | . |
| pathway | | | | |
| interim targets | timebound interim metrics and targets for all scopes for minimum every 5 years with explicit baseyear defined | top | no | no |
| science-based | interim targets shown to be line with third party verified orderly sector-specific 1.5 degrees transition pathways with no or limited overshoot, with frontloaded activity | top | no | . |
| offsetting | | | | |
| limited | no interim target reliance on offsets and carbon credits and minimal net zero offsetting reliance (only for unabatable residual emissions) | high | no | . |

| | | | | |
|-----------------------|---|--------|----|----|
| permanent | if use carbon offsets consistently with previous indicator: will use (only) from additional, permanent third-party verified technological carbon removal projects, permanent third-party verified emission avoidance projects or third-party verified natural carbon removals | medium | no | . |
| governance | | | | |
| structure | | | | |
| organisation | climate governance structure defined | top | no | no |
| mainstreaming | mainstreaming of plan in overall strategy, risk management, decision-making, processes, policies and resource allocation | high | no | no |
| skills | | | | |
| board | board-level competence on climate ensured | high | no | no |
| needs | available skills and additional capacity needs to implement targets defined | medium | no | no |
| training | strategy and training to close requirement gaps defined | medium | no | no |
| inhouse | inhouse skills are maintained and sustainability is not majorly outsourced to external consultancies | high | no | no |
| accountability | | | | |
| board | board climate oversight, mandate, target setting responsibility and terms of reference defined | top | no | no |
| oversight | quarterly review of activities by board to track about progress against targets ensured | medium | no | no |
| executive | executive oversight and target accountability structure defined | high | no | no |
| management | management responsibilities for target implementation defined | medium | no | no |
| incentives | | | | |
| culture | target-supporting culture in HR and leadership implemented | medium | no | no |
| remuneration | significant percentage of executive management remuneration is linked to progress against and achievement of transition plan interim targets | top | no | no |
| misalignment | climate misaligned and fossil fuel support executive management incentives are reported | high | no | no |
| transparency | | | | |
| disclosure | annual GHG inventory, strategy, targets and activities / TCFD disclosure, integrated in or available alongside mainstream filings publicly disclosed | high | no | no |
| assurance | level of assurance and verification of disclosed plan and statements disclosed | medium | no | no |
| consistency | organisational boundary consistent with organisatory boundary used in financial accounting | high | . | no |

| | | | | |
|----------------------|--|--------|----|----|
| definitions | definition for climate aligned, transition, misaligned explained | high | . | . |
| strategy | | | | |
| management | | | | |
| business | business, product and service strategy with activities, resources and decommissioning to implement target aligned | top | no | no |
| production | strategy for production process changes to fulfil interim targets defined | high | no | no |
| quantification | subtargets in KPIs quantified | high | no | no |
| sensitivity | scenario envelopes inform targets and sensitivity analysis to test strategic and operational resilience reported | medium | no | no |
| assumptions | strategy assumptions and feasibility requirements: policies, technological change, client and consumer demand, physical impacts reported | medium | no | no |
| high carbon | | | | |
| exploration | strategy for immediate stop of support for additional fossil fuel exploration and supply (extend fields and new field discoveries) defined | high | no | no |
| supply | strategy for decommissioning and canceling of support for new or existing fossil fuel exploration and supply infrastructure defined | medium | no | no |
| demand | strategy to phase out all unabated own fossil fuel use and carbon emitting assets defined | medium | no | no |
| low carbon | | | | |
| renewables demand | strategy for scaling up own renewable energy procurement and consumption defined | medium | no | no |
| renewables supply | strategy for scaling up renewable energy investments and supply defined | medium | no | no |
| climate solutions | strategy for scaling up investments in climate solutions technologies defined | medium | no | no |
| balance sheet | | | | |
| opex | strategy for opex targets to fulfil interim targets defined | medium | no | no |
| capex | strategy for capex targets to fulfil interim targets defined | high | no | no |
| revenues | strategy for net zero aligned / "green" revenues targets defined | medium | . | no |
| r&d | strategy for alignment of R&D with net zero targets defined | high | no | no |
| engagement | | | | |
| upstream | 1.5 degrees engagement strategy with upstream value chain activities strategy defined | high | no | no |
| downstream | 1.5 degrees engagement strategy with downstream value chain activities strategy defined | high | no | no |

| | | | | |
|------------------------|--|--------|----|----|
| direct lobbying | 1.5 degrees engagement strategy with policy makers activities strategy defined | high | no | no |
| indirect lobbying | 1.5 degrees engagement strategy within industry associations activities strategy defined | high | no | no |
| escalation | serious escalation strategies if engagement at each level is not effective strategy defined | medium | no | no |
| just transition | | | | |
| planning | strategy, monitoring and activities to mitigate adverse impacts on workforce and communities defined | high | no | . |
| participatory | plan developed with affected workers, communities and stakeholders | medium | no | . |
| biosphere | | | | |
| nature | mitigate adverse impacts on and adapt to changes in the natural environment and the provision of ecosystem services strategy defined | medium | no | . |
| deforestation | activities to halt deforestation by 2025 defined | high | no | . |
| biodiversity | activities to halt biodiversity loss by 2030 defined | medium | no | . |
| water | activities to reduce water consumption and pollution defined | medium | no | . |
| tracking | | | | |
| emissions | | | | |
| absolute scope 1 | GHG emissions scope 1 reported | top | . | no |
| absolute scope 2 | GHG emissions scope 2 reported | top | . | no |
| absolute scope 3 | GHG emissions scope 3 reported | top | . | no |
| scope 3 categories | coverage scope 3 categories and reasons for exclusions explained | high | . | no |
| intensity scope 1 | GHG intensity scope 1 reported | medium | . | no |
| intensity scope 2 | GHG intensity scope 2 reported | medium | . | no |
| intensity scope 3 | GHG intensity scope 3 reported | medium | . | no |
| progress | | | | |
| interim targets | annual progress against net zero targets reported | top | . | no |
| trend absolute scope 1 | absolute GHG emissions scope 1 past 5 years reported | medium | . | no |
| trend absolute scope 2 | absolute GHG emissions scope 2 past 5 years reported | medium | . | no |
| trend absolute scope 3 | absolute GHG emissions scope 3 past 5 years reported | medium | . | no |

| | | | | |
|-------------------------|--|--------|---|----|
| trend intensity scope 1 | GHG intensity scope 1 past 5 years declining | medium | . | no |
| trend intensity scope 2 | GHG intensity scope 2 past 5 years declining | medium | . | no |
| trend intensity scope 3 | GHG intensity scope 3 past 5 years declining | medium | . | no |
| drivers | drivers of GHG changes reported: divestments, mergers and acquisitions, technology investments | high | . | no |
| deforestation | annual progress against deforestation targets reported | medium | . | no |
| capex | | | | |
| aligned | Amount of climate aligned capex reported | high | . | no |
| transition | Amount of climate transition capex reported | medium | . | no |
| misaligned | Amount of climate misaligned capex reported | medium | . | no |
| innovation | | | | |
| aligned | Amount of climate aligned R&D reported | medium | . | no |
| transition | Amount of climate transition R&D reported | medium | . | no |
| misaligned | Amount of climate misaligned R&D reported | medium | . | no |
| revenues | | | | |
| aligned | Amount of climate aligned revenues reported | medium | . | no |
| transition | Amount of climate transition revenues reported | medium | . | no |
| misaligned | Amount of climate misaligned revenues reported | medium | . | no |
| engagement | | | | |
| direct lobbying | corporate climate policy positions and lobbying activities reported | high | . | no |
| indirect lobbying | membership in trade associations reported | high | . | no |
| interest alignment | alignment transition plan with trade association's lobbying reported | medium | . | no |
| engagements | corporate / peer engagement activities reported | medium | . | no |
| escalations | escalation activities reported | medium | . | no |

Table 2: Indicators, requirements, priorities, and red flag triggers.

4. Next Steps

This concept note focused on the design of easy to use red flag indicators for a scalable first assessment of transition plans to help prevent greenwashing. It is not a comprehensive guide to address the issue of directing financial resources to the sectors enabling the transition to a low-carbon economy. In addition, it does not touch upon the issue of the need for granular country-sector assessments to fully assess ambition and transition risks of a company. As a consequence, many aspects, although extremely important, are not included. They should be addressed by users in the engagement phase of the assessment.

For instance, we abstract from the discussion about new financial instruments that can be used to finance green projects. A relevant example in this context is provided by tokenized green bonds. Tokenization is a pivotal process involving the conversion of tangible real-world assets, including physical green assets such as hydropower plants or rights, into digital tokens that can be represented and traded on a blockchain or distributed ledger system (DLT). Asset tokenization has the potential to overcome some of the infrastructure limitations in traditional finance. It enables creating a secondary market where fractional ownership of assets can be traded, and information may be shared in real-time. Particularly relevant in our context is the greater transparency offered by these new financial instruments as all transactions on a blockchain are accessible to the network's participants.

Another important limitation of the suggested framework is the absence of region- and sector specific considerations and scenarios. Clearly, some of the indicators will be more relevant for companies in a given sector compared to companies in other sectors. Other important dimensions of heterogeneity the current approach fails to capture are related to companies location, size and asset classes. Sector-specific assessment approaches have for example been undertaken by the [Oxford Sustainable Finance Group](#) or [WWF Germany](#). To enhance ambition assessments of across transition plans, standardised region-sector scenarios for transition plan assessments would also be helpful, and are currently explored in various research projects.

Finally, the current focus is on climate-related transition plans. The latter should be extended to more deeply cover broader environmental dimensions such as biodiversity, water and deforestation (see e.g. WWF's [Nature in Transition Plans](#)). Similarly, the inclusion of additional indicators to capture adaptation, circular economy and other social aspects would improve the accuracy of the assessment based on the red flag approach.

In a second phase of the project, we will road test the concept and apply it to actual companies. To this end, we will (1) extract transition plans from corporate communications (using our [ClimateBert](#) algorithm in conjunction with our new [ChatReport](#) tool), and (2) compare these claims to third party information, to assess the real performance of a company against its rhetoric. This analysis will be done with a focus on the oil and gas sector, assessing the difference between disclosed transition targets and their asset-level investments (using asset level data from the Spatial Finance Initiative and Asset Impact), and their lobbying activities (using the data from Influencemap).

Appendix

A.1 Indicator table with frequencies

The column “sum” displays the number of times the indicators appear in the frameworks. A value denoted by 0.5 implies that the indicator is only partially covered by the respective framework, for example by being a recommendation amongst others, and not a core required element.

| item | requirement | frequency |
|-------------------|---|-----------|
| target | | |
| headline | | |
| commitment | climate commitment wording is available | 23,5 |
| cheap talk | commitment is not classified as cheap talk by ClimateBERT | 0 |
| absolute | absolute emission reduction target defined | 22,5 |
| intensity | intensity targets are shown to be aligned with absolute targets | 10,5 |
| ambition | | |
| net zero | net zero target defined | 19,5 |
| 2050 | net zero target achieved no later than 2050 | 21 |
| 2030 | plan for -50% emissions by 2030 | 5 |
| coverage | | |
| complete | target covers all business activities and subsidiaries | 18,5 |
| scope 1 | absolute emissions target for scope 1 defined for min 95% of scope 1 emissions | 21 |
| scope 2 | absolute emissions target for scope 2 defined for min 95% of scope 2 emissions | 21 |
| scope 3 | absolute emissions target for scope 3 defined for min 95% of scope 3 emissions | 19,5 |
| scope sum | sum of scope targets shown to meet overall target ambition | 2,5 |
| methane | separate targets for CO2 and methane defined | 6,5 |
| pathway | | |
| interim targets | timebound interim metrics and targets for all scopes for minimum every 5 years with explicit baseyear defined | 23,5 |
| science-based | interim targets shown to be line with third party verified orderly sector-specific 1.5 degrees transition pathways with no or limited overshoot, with frontloaded activity | 22 |
| offsetting | | |
| limited | no interim target reliance on offsets and carbon credits and minimal net zero offsetting reliance (only for unabatable residual emissions) | 14 |
| permanent | if use carbon offsets consistently with previous indicator: will use (only) from additional, permanent third-party verified technological carbon removal projects, permanent third-party verified emission avoidance projects or third-party verified natural carbon removals | 11 |

| | | |
|-----------------------|--|------|
| governance | | |
| structure | | |
| organisation | climate governance structure defined | 18 |
| mainstreaming | mainstreaming of plan in overall strategy, risk management, decision-making, processes, policies and resource allocation | 11 |
| skills | | |
| board | board-level competence on climate ensured | 10 |
| needs | available skills and additional capacity needs to implement targets defined | 8 |
| training | strategy and training to close requirement gaps defined | 9 |
| inhouse | inhouse skills are maintained and sustainability is not majorly outsourced to external consultancies | 0 |
| accountability | | |
| board | board climate oversight, mandate, target setting responsibility and terms of reference defined | 17 |
| oversight | quarterly review of activities by board to track about progress against targets ensured | 11,5 |
| executive | executive oversight and target accountability structure defined | 15,5 |
| management | management responsibilities for target implementation defined | 12,5 |
| incentives | | |
| culture | target-supporting culture in HR and leadership implemented | 6 |
| remuneration | significant percentage of executive management remuneration is linked to progress against and achievement of transition plan interim targets | 16 |
| misalignment | climate misaligned and fossil fuel support executive management incentives are reported | 6 |
| transparency | | |
| disclosure | annual GHG inventory, strategy, targets and activities / TCFD disclosure, integrated in or available alongside mainstream filings publicly disclosed | 14 |
| assurance | level of assurance and verification of disclosed plan and statements disclosed | 6 |
| consistency | organisational boundary consistent with organisatory boundary used in financial accounting | 4,5 |
| definitions | definition for climate aligned, transition, misaligned explained | 3,5 |
| strategy | | |
| management | | |
| business | business, product and service strategy with activities, resources and decommissioning to implement target aligned | 22,5 |
| production | strategy for production process changes to fulfil interim targets defined | 16 |
| quantification | subtargets in KPIs quantified | 17 |
| sensitivity | scenario envelopes inform targets and sensitivity analysis to test strategic and operational resilience reported | 16 |
| assumptions | strategy assumptions and feasibility requirements: policies, technological change, client and consumer demand, physical impacts reported | 12,5 |
| high carbon | | |

| | | |
|-------------------|--|------|
| exploration | strategy for immediate stop of support for additional fossil fuel exploration and supply (extend fields and new field discoveries) defined | 11,5 |
| supply | strategy for decommissioning and canceling of support for new or existing fossil fuel exploration and supply infrastructure defined | 5,5 |
| demand | strategy to phase out all unabated own fossil fuel use and carbon emitting assets defined | 15,5 |
| low carbon | | |
| renewables demand | strategy for scaling up own renewable energy procurement and consumption defined | 15 |
| renewables supply | strategy for scaling up renewable energy investments and supply defined | 15 |
| climate solutions | strategy for scaling up investments in climate solutions technologies defined | 14,5 |
| balance sheet | | |
| opex | strategy for opex targets to fulfil interim targets defined | 13,5 |
| capex | strategy for capex targets to fulfil interim targets defined | 16,5 |
| revenues | strategy for net zero aligned / "green" revenues targets defined | 15 |
| r&d | strategy for alignment of R&D with net zero targets defined | 13 |
| engagement | | |
| upstream | 1.5 degrees engagement strategy with upstream value chain activities strategy defined | 18,5 |
| downstream | 1.5 degrees engagement strategy with downstream value chain activities strategy defined | 18,5 |
| direct lobbying | 1.5 degrees engagement strategy with policy makers activities strategy defined | 17 |
| indirect lobbying | 1.5 degrees engagement strategy within industry associations activities strategy defined | 17 |
| escalation | serious escalation strategies if engagement at each level is not effective strategy defined | 3,5 |
| just transition | | |
| planning | strategy, monitoring and activities to mitigate adverse impacts on workforce and communities defined | 12,5 |
| participatory | plan developed with affected workers, communities and stakeholders | 5,5 |
| biosphere | | |
| nature | mitigate adverse impacts on and adapt to changes in the natural environment and the provision of ecosystem services strategy defined | 13 |
| deforestation | activities to halt deforestation by 2025 defined | 11,5 |
| biodiversity | activities to halt biodiversity loss by 2030 defined | 8 |
| water | activities to reduce water consumption and pollution defined | 7 |
| tracking | | |
| emissions | | |
| absolute scope 1 | GHG emissions scope 1 reported | 16,5 |
| absolute scope 2 | GHG emissions scope 2 reported | 16,5 |
| absolute scope 3 | GHG emissions scope 3 reported | 16 |

| | | |
|-------------------------|---|------|
| scope 3 categories | coverage scope 3 categories and reasons for exclusions explained | 7 |
| intensity scope 1 | GHG intensity scope 1 reported | 10,5 |
| intensity scope 2 | GHG intensity scope 2 reported | 10,5 |
| intensity scope 3 | GHG intensity scope 3 reported | 10 |
| progress | | |
| interim targets | annual progress against net zero targets reported | 14 |
| trend absolute scope 1 | absolute GHG emissions scope 1 past 5 years reported | 5,5 |
| trend absolute scope 2 | absolute GHG emissions scope 2 past 5 years reported | 5,5 |
| trend absolute scope 3 | absolute GHG emissions scope 3 past 5 years reported | 5,5 |
| trend intensity scope 1 | GHG intensity scope 1 past 5 years declining | 7 |
| trend intensity scope 2 | GHG intensity scope 2 past 5 years declining | 6 |
| trend intensity scope 3 | GHG intensity scope 3 past 5 years declining | 6 |
| drivers | internal and external drivers of GHG changes reported, covering divestments, mergers and acquisitions, technology investments | 6,5 |
| deforestation | annual progress against deforestation targets reported | 4,5 |
| capex | | |
| aligned | Amount of climate aligned capex reported | 10,5 |
| transition | Amount of climate transition capex reported | 8,5 |
| misaligned | Amount of climate misaligned capex reported | 9 |
| innovation | | |
| aligned | Amount of climate aligned R&D reported | 3 |
| transition | Amount of climate transition R&D reported | 3 |
| misaligned | Amount of climate misaligned R&D reported | 3 |
| revenues | | |
| aligned | Amount of climate aligned revenues reported | 3 |
| transition | Amount of climate transition revenues reported | 3 |
| misaligned | Amount of climate misaligned revenues reported | 3 |
| engagement | | |
| direct lobbying | corporate climate policy positions and lobbying activities reported | 10 |
| indirect lobbying | membership in trade associations reported | 10 |
| interest alignment | alignment transition plan with trade association's lobbying reported | 9 |
| engagements | corporate / peer engagement activities reported | 1 |
| escalations | escalation activities reported | 1 |

Table A1: Indicators frequencies in the assessed initiatives' frameworks. Total amount of frameworks assessed: 28. Note that the amount of metrics items is relatively low, since only those items have been counted, where the specific metric is being discussed and transparency requested in the context of assessing credibility, ambition and feasibility of a transition plan.